

What is claimed is:

1. A multi-layer printed circuit board for mounting electronic parts on it, comprising:

    a first signal layer formed on an obverse surface of said multi-layer printed circuit board;

    a ground layer arranged at a position next to said first signal layer;

    an electronic power source layer arranged at a position next to said ground layer; and

    a second signal layer formed on a reverse surface of said multi-layer printed circuit board;

    wherein a first ground pattern is formed around a peripheral area of said first signal layer, while a second ground pattern is formed around a peripheral area of said second signal layer; and

    wherein said first ground pattern and said second ground pattern are electrically coupled to each other by a plurality of through holes, and said multi-layer printed circuit board is installed on an electro-conductive housing in such a manner that a substantially whole area of said second ground pattern electrically contacts a mounting area of said electro-conductive housing, said mounting area being

an electro-conductive area continuously coupled to said electro-conductive housing.

2. The multi-layer printed circuit board of claim 1,

wherein a snubber circuit, being a serial connection of a resistor and a capacitor, is coupled between said ground layer and said electronic power source layer.

3. A method for installing a multi-layer printed circuit board on an electro-conductive housing, said multi-layer printed circuit, on which electronic parts are mounted, comprising a first signal layer formed on an obverse surface of said multi-layer printed circuit board, a ground layer arranged at a position next to said first signal layer, an electronic power source layer arranged at a position next to said ground layer, and a second signal layer formed on a reverse surface of said multi-layer printed circuit board, said method comprising the steps of:

forming a first ground pattern around a peripheral area of said first signal layer;

forming a second ground pattern around a peripheral area of said second signal layer;

coupling electrically said first ground pattern to said second ground pattern with a plurality of through holes; and

mounting said multi-layer printed circuit board on a mounting area of said electro-conductive housing in such a manner that a substantially whole area of said second ground pattern electrically contacts said mounting area of said electro-conductive housing, said mounting area being an electro-conductive area continuously coupled to said electro-conductive housing.

4. The method of claim 3,

wherein said mounting area of said electro-conductive housing is formed in a protruded shape, so that said electronic parts are held by said multi-layer printed circuit board without physically touching said electro-conductive housing.

5. The method of claim 3,

wherein an inner area surrounded by said mounting area of said electro-conductive housing is formed in a concaved shape, so that said electronic parts are held by said multi-layer printed circuit board without physically touching said electro-conductive housing, and said inner area is opposed

against said reverse surface of said multi-layer printed circuit board.

6. The method of claim 3,

wherein a part of an inner area surrounded by said mounting area of said electro-conductive housing is formed in a concaved shape, so that an electronic part, being one of said electronic parts, is held by said multi-layer printed circuit board without physically touching said electro-conductive housing, and said inner area is opposed against said reverse surface of said multi-layer printed circuit board.

7. The method of claim 3,

wherein an inner area surrounded by said mounting area of said electro-conductive housing is a flat plane continued from said mounting area, so that said multi-layer printed circuit board is mounted on said electro-conductive housing with a insulation layer between said inner area and said flat plane, and said inner area is opposed against said reverse surface of said multi-layer printed circuit board.

8. A method for installing a multi-layer printed circuit board on an electro-conductive housing, said multi-layer printed circuit, on which electronic parts are mounted, comprising a first signal layer formed on an obverse surface of said multi-layer printed circuit board, a ground layer arranged at a position next to said first signal layer, an electronic power source layer arranged at a position next to said ground layer, and a second signal layer formed on a reverse surface of said multi-layer printed circuit board, said method comprising the steps of:

forming a first ground pattern around a peripheral area of said first signal layer;

forming a second ground pattern around a peripheral area of said second signal layer;

coupling electrically said first ground pattern to said second ground pattern with a plurality of through holes; and

mounting said multi-layer printed circuit board on a mounting area of said electro-conductive housing in such a manner that a substantially whole area of said first ground pattern electrically coupled to said electro-conductive housing through an electro-conductive member.

9. The method of claim 8,

wherein said multi-layer printed circuit board is held between said electro-conductive member and said electro-conductive housing by fastening them with screws, so that said electro-conductive member press-contacts said first ground pattern while press-contacting said electro-conductive housing.

10. The method of claim 8,

wherein an inner area surrounded by said mounting area of said electro-conductive housing is formed in a concaved shape, so that said electronic parts are held by said multi-layer printed circuit board without physically touching said electro-conductive housing, and said inner area is opposed against said reverse surface of said multi-layer printed circuit board.

11. The method of claim 8,

wherein a part of an inner area surrounded by said mounting area of said electro-conductive housing is formed in a concaved shape, so that an electronic part, being one of said electronic parts, is held by said multi-layer printed circuit board without physically touching said electro-conductive housing, and said inner area is opposed against

said reverse surface of said multi-layer printed circuit board.

12. The method of claim 8,

wherein an inner area surrounded by said mounting area of said electro-conductive housing is a flat plane continued from said mounting area, so that said multi-layer printed circuit board is mounted on said electro-conductive housing with a insulation layer between said inner area and said flat plane, and said inner area is opposed against said reverse surface of said multi-layer printed circuit board.